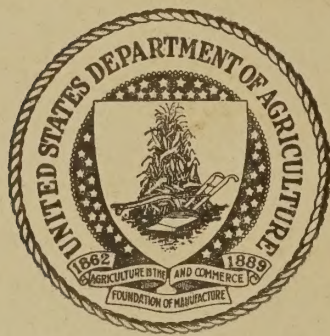


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HOME AND FARM APPLIANCE
STANDARDS AND SPECIFICATIONS

Compiled by

Electro-Agriculture Section
Technical Standards Division
Rural Electrification Administration

May, 1948

This is a compilation of existing standards on electric home and farm appliances including a brief statement as to the content of each. In addition to those listed, the American Standards Association, 70 East 45th Street, New York 17, New York, is preparing standards for test procedures for household automatic electric flatirons, household electric ranges, and household automatic electric storage-type water heaters. All should be available in the not far distant future.

The names and addresses of the organizations that published the standards referred to in this paper are as follows:

1. American Society of Refrigeration Engineers (ASRE)
50 West 40th Street
New York, New York
2. American Standards Association (ASA)
70 East 45th Street
New York 17, New York
3. Certified Lamp Makers (CLM)
2116 Keith Building
Cleveland 15, Ohio
4. National Electrical Manufacturers Association (NEMA)
155 East 44th Street
New York 17, New York

HOME APPLIANCES

FANS, ELECTRIC

"Standards for Fans"
NEMA Publication No. 47-128; 1947

Practical information concerning the testing, rating, performance and manufacturing of alternating and direct-current electric fans of the desk and bracket type, pedestal type, ceiling type, ventilating type (made from desk or bracket fan parts) and air circulators is covered in these standards. Also included are a classification of fan motors, the procedure to follow in testing fan performance and noise level, and manufacturing standards.

FLATIRONS, ELECTRIC

"Standards for Flatirons"
NEMA Publication No. 40-61; 1940

This standard describes in detail the following laboratory tests for flatirons:

- (1) Dielectric test
- (2) Leakage current test
- (3) Temperature regulation test
- (4) Efficiency test
- (5) Sole plate temperature test for different thermostat settings
- (6) Life test
- (7) Mechanical abuse test
- (8) Sole plate finish test for resistance to scratching

Definitions and manufacturing standards are also included.

FREEZERS

"Home Freezer Standards"
NEMA Publication No. 45-106; 1945

Practical information concerning the testing and rating of home freezers is provided by these standards. A uniform procedure, for determining the performance under specified laboratory test conditions, is outlined. A section is devoted to the rating of the storage capacity.

The main test to which the freezer is subjected is a no-load test to determine the electric energy consumption per 24 hours, and the operating time in percent for specified average cabinet-air temperatures and ambient temperatures.

The test conditions, and test procedures are presented in detail, along with a sample sheet for reporting the test results, and freezer data.

HEATERS, RADIANT - See Radiant Heaters

HOT PLATES, ELECTRIC

"Standards for Hot Plates and Disc Stoves".
NEMA Publication No. 46-113; 1946

Practical information contained in these standards concerns the rating, performance, testing and manufacture of hot plates and disc stoves.

Rating standards involving voltage and wattage input are specified. The performance standards are described in detail in the following tests to be performed on hot plates and disc stoves:

- (1) Dielectric test
- (2) Leakage current test
- (3) Temperature test
- (4) Life test

There is also included a section on manufacturing standards, which covers markings, electric supply connections and finishes.

LAMPS, ELECTRIC

"Standards for Certified Lamp Makers Lamps"
CLM 1947

The lamp specifications cover safety, mechanical construction, electrical construction, and types of lamp shades. For each model of lamp there is a supplementary specification, stating the lighting service for which the model is intended, the illumination to be delivered on the prescribed test plane, and the proportion of this illumination that must come from the ceiling and upper side walls as well as from the outside of the shade. Before a manufacturer can place a C. L. M. tag on a lamp, a working model must have been tested and approved by the Electrical Testing Laboratories, New York, New York, for compliance with the established C. L. M. Specifications.

Note: Taken from the reprint of "The Story of C. L. M. Lamps" by E. W. Commery, The Magazine of Light, Vol. 16, No. 3, General Electric Company, Nela Park, Cleveland, Ohio.

RADIANT HEATERS

"Standards for Portable Radiant Heaters"
NEMA Publication No. 46-114; 1946

The rating standards for portable radiant heaters furnish details as to the standard voltage, allowable variation from rated input, and the rating of the heating element and holder.

The performance standards described in detail, include the following tests to be performed on them:

- (1) Dielectric test
- (2) Leakage current test
- (3) Temperature test
- (4) Life test
- (5) Drop test

Sections on manufacturing standards and definitions are included, which cover markings, electric supply connections and finishes.

RANGE, ELECTRIC

"Test Specifications for Household Electric Ranges"
NEMA Publication No. 108; 1940

The standards describe a uniform testing procedure, provide definitions and specify test conditions for the determination of safety, performance, durability, construction, and convenience for household electric ranges. It also includes standards for voltage ratings of range elements and their adaptation to electric supply circuits.

REFRIGERATORS, ELECTRIC

1. "Method of Computing Food-Storage Volume and Shelf Area of Automatic Household Refrigerators"
ASA B 38.1; 1944

These standards provide a uniform procedure for determining the food-storage volume and shelf area of automatic household refrigerators. They also list the data to be included in the food capacity reports.

2. "Test Procedures for Household Electric Refrigerators"
(Mechanically Operated)
ASA B 38.2; 1944

A uniform procedure for determining the performance of a mechanically operated household refrigerator under specified laboratory tests is provided for in these standards. These test conditions as prescribed are not intended to duplicate normal refrigerator use but rather to form a basis for laboratory comparisons. A procedure for conducting no-load and ice making tests is included.

3. "Household Electric Refrigerator Standards"
NEMA Publication No. 42-79; 1942

These standards outline a uniform method of determining the food storage volume and shelf area, and a uniform procedure for determining the performance of mechanically operated household refrigerators under specified laboratory test conditions. The test conditions are not intended to duplicate normal refrigerator use but rather to form a basis for laboratory comparisons.

ROASTER, ELECTRIC

"Standards for Roasters"
NEMA Publication No. 46-115; 1946

The following laboratory tests to be performed on roasters are described in detail in these standards:

- (1) Dielectric test
- (2) Leakage current test
- (3) Temperature regulation test
- (4) Efficiency test
- (5) Life test
- (6) Drop test

The maximum permissible temperature of various roaster surfaces under specified test conditions is given, along with the method of rating the roaster's capacity, and a list of manufacturing standards.

WATER HEATERS

1. "Standards for Electric Water Heaters"
NEMA Publication No. 45-104; 1945

These standards provide practical information concerning performance, rating, testing and manufacture of electric water heaters. Set forth in detail are ratings for voltage, and the wattages of either single or double element heaters used in different sizes of tanks. The normal factory thermostat setting shall be 150 F, having limited temperature differentials and temperature adjustment ranges. The test pressure and working pressure of the tank are specified as 250 pounds per square inch, and 106 pounds per square inch, respectively.

2. "Test Specifications for Automatic Electric Storage Water Heaters"
NEMA Publication No. 103; 1941

A uniform testing procedure for determination of safety, performance, durability, construction, and convenience of automatic electric storage water heaters is described. It also includes definitions and information on markings, capacity, thermostatic control, wiring installation and finishes.

FARM APPLIANCES

COOLERS, ELECTRIC MILK

- "Methods of Rating and Testing Complete Can-Type Milk Coolers"
ASRE Circular No. 21-42; 1942

The information secured through the application of this testing procedure provides the purchaser with standard ratings so that he

may select adequate milk cooling equipment insofar as capacity and speed of cooling are concerned. Included in the standard are definitions, testing procedure, the manner in which the A. S. R. E. rated cooling capacity shall be calculated, and the information which must be included in the report of the test.

MOTORS

"Motor and Generator Standards"
NEMA Publication No. 45-102; 1945

These standards cover alternating-current and direct-current electric motors and generators of all classes and sizes. They provide practical information regarding their construction, test, performance and manufacture. The following test items are specified for motors of various horsepower and frequency ratings:

- (1) Approximate full-load rpm
- (2) Breakdown torque
- (3) Maximum locked-rotor currents
- (4) Temperatures rise permissible for motors with different classes of insulation
- (5) Dielectric test that must be performed
- (6) The allowable voltage and frequency variation with which the motor shall operate successfully

Included are performance data sheets, a section on definitions and an index.

WELDERS

"Electric Arc-Welding Machine and Electrode Standards"
NEMA Publication No. 45-105; 1945

These electric arc-welding machine standards provide practical information concerning construction, test, performance and manufacture of:

- (1) Direct-current arc-welding generators, motor generators and dynamotors
- (2) Welding circuit control panels
- (3) Alternating current arc-welding transformers, generators and motor generators
- (4) Rectifier arc-welding equipment

One section is on the transformer arc welder, limited-input type. It specifies current, voltage and duty-cycle ratings, allowable temperature rise, and required name plate data. The procedure for making temperature, efficiency and dielectric tests is given, along with pertinent definitions. Welding electrode standards and an appendix are included.

May, 1948.

